

Please replace delete the words in Paragraph 4, page 3, lines 17-25, on line 20 "storage, fuel cells" and replace with "loading", and delete the word "pressure-" in the same sentence, for the following rewritten sentence.

-- The present invention relates to electrochemical reactions in or about metals, such as palladium which has been electrochemically loaded with deuterium, but it has relevance as well, to hydrogen loading, nuclear fusion, and other reactions in loaded metals such as titanium or palladium filled with deuterium, and to the broader field of metallurgy and engineering in or about metals, including Groups IVb, Vb, and some rare earths. --

Please add to the OTHER PUBLICATIONS listed on page 4 the following additional references, for the following rewritten set of references.

-- J. O'M BOCKRIS, K.N. REDDY, "Modern Electrochemistry", Plenum Press (1970).

C. A. HAMPEL, Rare Metals Handbook, Reinhold Publishing Corp, (1954).

M. HANSEN, Constitution of Binary Alloys, McGraw-Hill Book Co., Inc. (1958).

J. R. Melcher,, "Continuum Electromechanics", MIT Press, Cambridge, (1981).

C. J. SMITHELLS, Metals Reference Book, Butterworths Scientific, (1949).

H. H. UHLIG, Corrosion and Corrosion Control, John Wiley & Sons, Inc., (1971).

M. SWARTZ, "Quasi-One-Dimensional Model Of Electrochemical Loading Of Isotopic Fuel Into A Metal", Fusion Technology, 22, 2, 296-300 (1992).

M. SWARTZ, (1994A) "Isotopic Fuel Loading Coupled To Reactions At An Electrode", Fusion Technology, 26, 4T, 74-77.

M. SWARTZ, (1994B) "Catastrophic Active Medium Hypothesis of Cold Fusion", Vol. 4. "Proceedings: "Fourth International Conference on Cold Fusion", EPRI and Office of Naval Research.

M. SWARTZ, "A Method To Improve Algorithms Used To Detect Steady State Excess Enthalpy", Transactions of Fusion Technology, 26, 156-159 (1996).

M. SWARTZ, "Consistency of the Biphasic Nature of Excess Enthalpy in Solid State Anomalous Phenomena with the Quasi-1-Dimensional Model of Isotope Loading into a Material", Fusion Technology, 31, 63-74 (1997A).

M. SWARTZ, "Hydrogen Redistribution By Catastrophic Desorption In Select Transition Metals", Journal of New Energy, 1, 4, 26-33 (1997B).

M. SWARTZ, "Codeposition Of Palladium And Deuterium", Fusion Technology, 32, 126-130, (1997C).

M. SWARTZ, Improved Electrolytic Reactor Performance Using  $\pi$ -Notch System Operation and Gold Anodes, Transactions of the American Nuclear Association, Nashville, Tenn 1998 Meeting, (ISSN:0003-018X publisher LaGrange, Ill) 78, 84-85 (1998A).

M. SWARTZ, "Patterns of Failure in Cold Fusion Experiments, Proceedings of the 33RD Intersociety Engineering Conference on Energy Conversion, IECEC-98-I229, Colorado Springs, CO, (1998B).

A. VON HIPPEL, "Dielectric Materials and Applications", MIT Press, (1954)

A. VON HIPPEL, D.B. Knoll, W.B. Westphal, "Transfer Of Protons Through 'Pure' Ice I<sub>H</sub> Single Crystals", J. Chem. Phys., 54, 134, (ALSO 145), (1971). --

Please delete the 12th through 16th words on page 10, paragraph 1, line 22, for the following rewritten sentence:

-- The power supply and control unit uses a current source as described in Swartz (1989), and are not shown in the figure. For simplicity, the electrical connections, heat removing apparatus, and several improvements described in this disclosure are not shown in figure 1. --

Please add to the following references to page 11 line 6 for the following rewritten sentence:

-- Therefore, a quasi-1-dimensional model can be used to describe the situation external to the cathode [SWARTZ, M., 1992, "Quasi-One-Dimensional Model of Electrochemical Loading of Isotopic Fuel into a Metal", Fusion Technology, 22, 2, 296-300; SWARTZ, M., 1994A, "Isotopic Fuel Loading Coupled To Reactions At An Electrode", fusion Technology, 26, 4T, 74-77; SWARTZ, M., 1997C, "Codeposition Of Palladium And Deuterium", Fusion Technology, 32, 126-130 (1997)]. --

Please replace the last sentence of the second paragraph on page 11 line 15 for the following rewritten sentences:

-- B is the diffusivity of the isotopic fuel loaded into the material. I, A and F are the electrical current, area, and the Faraday. [D+] is spatially and time variant.

Please add to the following references to the first sentence of the second paragraph on page 13 line 26 for the following rewritten sentence:

-- This occurs until, by a second catastrophic process, the fusion-defect-site is no longer confined [Swartz, M., 1994B, "Catastrophic Active Medium Hypothesis of Cold Fusion", Vol. 4. "Proceedings: "Fourth International Conference on Cold Fusion", EPRI and Office of Naval Research; Swartz, M., 1997B, "Hydrogen Redistribution By Catastrophic Desorption In Select Transition Metals", Journal of New Energy, 1, 4, 26-33]. --

Please replace the last sentence of the first paragraph on page 20 lines 9-11 with the following rewritten sentences:

-- The calculated fugacities involved are enormous ranging from 5000 up to an estimated  $10^7$  atmospheres for hydrogenated palladium [Bockris]. --

Please add to the following references to first sentence of the second paragraph on page 21 line 12-16 for the following rewritten sentence:

-- This type of system, coupled with the FUSOR (Jet Energy Technology, P.O. Box 81135, Wellesley Hills, MA) drive system or its equivalent [Application '976; Swartz, M., 1997A, "Consistency of the Biphasic Nature of Excess Enthalpy in Solid State Anomalous Phenomena with the Quasi-1-Dimensional Model of Isotope Loading into a Material", Fusion Technology, 31, 63-74; Swartz, M., 1998A, Improved Electrolytic Reactor Performance Using  $\pi$ -Notch System Operation and Gold Anodes, Transactions of the American Nuclear Association, Nashville, Tenn 1998 Meeting, (ISSN:0003-018X publisher LaGrange, Ill) 78, 84-85], is capable of filling the cathode with deuterium from the solution. However, the deuterated metals could also be filled by codeposition of deuterium and palladium, or by high pressure deuterium gas. --